ORIGINAL (Red)

R-585-3-6-35
PRELIMINARY ASSESSMENT OF
RED LION LANDFILL
PREPARED UNDER

TDD NO. F3-8601-06
EPA NO. PA-1703
CONTRACT NO. 68-01-6699

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

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NUS CORPORATION
SUPERFUND DIVISION

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SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-6699. This specific report was prepared in accordance with Technical Directive Document No. F3-8601-06 for the Red Lion Landfill located in Red Lion, York County, Pennsylvania.

1.2 Scope of Work

NUS FIT III was tasked to perform a preliminary assessment for the subject site.

1.3 Summary

The Red Lion Landfill consists of a 5-acre, inactive, unlined, and unpermitted landfill located in Red Lion, Pennsylvania. Between the years 1953 and 1973, municipal waste was burned at the adjacent Red Lion Municipal Incinerator (TDD No. F3-8601-05) and the residual ash was disposed of at the subject site. On those occasions when the incinerator was not operating, the unprocessed garbage was disposed of on site. Upon closure in 1973, municipal garbage was transported to Bahn Enterprises Landfill (TDD No. F3-8212-01) in East Prospect, Pennsylvania. Wastes at the Red Lion Landfill were compacted daily into 2-foot layers and covered with 6 inches of compacted soil. From 1973 to 1979, the western portion of the landfill was filled with highway department rubble. All wastes have been covered with 2 feet of native soil, graded, and vegetated. No waste has been disposed at the site since 1979, and to date no sampling has been conducted on site.

SECTION 2

2.0 THE SITE

2.1 Location

The Red Lion Landfill is located outside the western boundary of Red Lion Borough on Vulcan Road, York County, Pennsylvania. The landfill is adjacent to the Red Lion Municipal Incinerator (TDD No. F3-8601-05). The site can be located on the Red Lion, Pennsylvania topographic quadrangle.

2.2 Site Layout

The landfill consists of approximately 5 horse shoe-shaped acres on the southern edge of the property. The entire property consists of the Red Lion Municipal Incinerator, Spec-tru-lite Shipping Company, and the Red Lion Borough Maintenance Garage. Mill Creek flows under the landfill and then along the western boundary of the site. The landfill has no access control measures (see appendix B, figure 1).

2.3 Ownership History

Red Lion Borough has owned this property since 1953. Prior to 1953, the property was farm land.

2.4 Site Use History

From 1953 to 1973, the landfill accepted residual ash from the Red Lion Municipal Incinerator. Unburned garbage was deposited in the landfill when the incinerator was inoperational. After the incinerator closed in 1973, the highway department disposed of highway rubble at the landfill until 1979. In 1979, the landfill was covered, graded, and vegetated and has remained unused since that time.

2.5 Permit and Regulatory Action History

No permits were issued for the Red Lion Landfill. The Pennsylvania Department of Environmental Resources (PA DER) did not issue a closure plan for the landfill. No regulatory action has taken place at the site.

2.6 Remedial Action To Date

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When the landfill ceased operating in 1979, the wastes were covered with 2 feet of native soil, graded, and vegetated. No closure plan was approved for the site.

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3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

The Red Lion Borough Authority supplies the subject area, including Red Lion Borough, Dallastown, Yoe, parts of Windsor Township, and York Township. Approximately 6,000 persons are served in these areas. The authority's water supply is obtained from Cabin Creek and Beaver Creek. The reservoir on Cabin Creek is located (b) (9) northeast of the incinerator. An intake on Beaver Creek is (b) (9) east of the site. Approximately 1,731,000 gallons per day (gpd) are drawn from these sources. Both sources are located in watersheds separate from the Red Lion watershed. The Red Lion Borough Authority has applied for a permit to draw water from the Susquehanna River in case of drought emergency.

Windsor Borough utilizes springs and a 200-foot well for their water supply. These sources are located (b) (9) south of Windsor Borough and (b) (9) east of the landfill. There are 487 people served by this water supply.

The remainder of the residents in the area (approximately 7,140) use groundwater for their water supply. The closest private groundwater well is located (b) (9) north of the site.

3.2 Surface Waters

Drainage from the site enters Mill Creek, which flows approximately 150 feet west of the incinerator. Mill Creek flows northwardly for 6 miles until it enters Codorus Creek. Both creeks are used for fishing, and there are no industrial or water supply intakes within 3 miles of the site. Water supplies in the area are drawn from creeks not affected by site drainage.

3.3 Geology and Soils

The site is situated within the Piedmont Uplands section of the Piedmont Physiographic Province. Bedrock of the site is of the lower Paleozoic Marburg schist, a member of the Wissahickon Formation. The Marburg is described as a gray-green schist. This unit occurs locally as a northeast trending belt approximately 3 miles in width. The borough of Red Lion lies roughly within the center of the belt. The Marburg is bounded to the north by the quartzite and schists of the undivided Antietam and Harpers Formations. It is bounded to the south by the albite-chlorite-schist member of the Wissahickon Formation. As a whole, the Wissahickon reaches thicknesses of between 8,000 and 10,000 feet.[1,2]

Naturally occurring soils for the site and adjacent areas are of the Manor Series: specifically, the Manor channery loam. This soil type is typical of those weathered from schist and phyllite parent material. The plow layer is described as a brown channery silt loam. This soil is locally eroded, so as to expose the yellow-brown silty clay loam subsoil.[4]

3.4 Groundwaters

Most of the groundwater within the schist bedrock is stored within the upper, weathered zone, and the highest yields are from this fractured portion of the Marburg. Typically, the Marburg schist exhibits a low permeability and porosity, indicating that, as a whole, the unit is essentially impermeabile. The limited secondary porosity is the result of joint and cleavage openings in the rock.[1]

Shallow, unconfined groundwater within the saprolite will flow downgradient to points of discharge, locally towards Mill Creek, immediately west of the site. Deeper flow within the bedrock is controlled primarily by the nature and occurrence of joint and cleavage plane openings.

Area wells inventoried by the PA DER produce potable water from the Marburg. The closest have been located in appendix C, figure 1. A summary of wells which produce from the Marburg schist is also included.[3]

3.5 Climate and Meteorology

According to the National Oceanic and Atmospheric Administration information, Red Lion lies in the Great Valley formed by the eastern foothills of the Appalachian chain. This mountain barrier provides a modifying influence on the climate. The average winter temperature is 33.7°F. The average summer temperature is 72°F. The normal annual total precipitation is 48 inches.

The mean annual lake evaporation is 34 inches. The net yearly precipitation is 14 inches. A 1-year, 24-hour rainfall will produce 2.4 inches of rain.

3.6 Land Use

The Red Lion Landfill lies to the south of the Red Lion Incinerator and the Red Lion Borough Maintenance Garage. The borough of Red Lion lies in the agricultural region of Pennsylvania. The areas within 1 mile of the site are the residential boroughs of Dallastown and Yoe. The area immediately south of the site is owned and operated by Master Craft, Incorporated. To the northeast, land use is residential. Land use west of the site is wooded. The Red Lion sewage treatment filtration plant is located west of the site, across Mill Creek. This plant is inactive.

3.7 Population Distribution

A count of homes shown on the United States Geological Survey (U.S.G.S.) topographic quadrangles for Red Lion, York, Glen Rock, and Stewartstown shows that within 1 mile of the landfill there are 6,212 people. Within 2 miles of the site, there are 13,625 people. The population within 3 miles is 18,823 people.

3.8 Critical Environments

According to the United States Fish and Wildlife Service, there are no critical environments at the Red Lion Municipal Incinerator as defined by the Hazard Ranking System (HRS) User's Manual.

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3.9 References

1. Geyer, Alan R., and J. Peter Wilshusen, Department of Environmental Resources. Engineering Characteristics of the Rocks of Pennsylvania. Environmental Geology Report 1, 1982.

2. Commonwealth of Pennsylvania Department of Environmental Resources, Topographic and Geologic Survey. Geologic Map of Pennsylvania. 1982.

3. Pennsylvania Department of Environmental Resources, Topographic and Geologic Survey. Water Well Data System for York County, Pennsylvania. 1983.

4. United States Department of Agriculture, Soil Conservation Service. Soil Survey for York County, Pennsylvania.

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SECTION 4

4.0 WASTE TYPES AND QUANTITIES

Ash residue from the Red Lion Municipal Incinerator was disposed in the landfill. Approximately 20 tons of ash were deposited per day. At times when the incinerator was inoperational, the unburned garbage was placed in the landfill. After the incinerator closed in 1973, garbage was taken to Bahn Enterprises Landfill in East Prospect, York County, Pennsylvania. From 1973 to 1979, the landfill accepted highway department debris (i.e., concrete, stones).

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SECTION 5

5.0 FIELD TRIP REPORT

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5.1 Summary

On Tuesday, February 4, 1986, NUS FIT III staff members Audrey Harrington and Thomas Pearce visited the Red Lion Landfill in Red Lion, Pennsylvania. The purpose of this visit was to perform a preliminary assessment of the site area. Weather conditions were rainy. The ground was covered with approximately 1/2 inch of snow. The temperature at the time of the FIT visit was 35°F.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Loren McCleary
Red Lion Borough Assistant Manager
Red Lion Borough Office
P.O. Box 190
Red Lion, PA 17356
(717) 244-2375

5.2.2 At The Site

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Red Lion Borough Assistant Manager
Red Lion Borough Office
P.O. Box 190
Red Lion, PA 17356
(717) 244-2375

Edward Henshaw
Highway Supervisor
Red Lion Borough Office
P.O. Box 190
Red Lion, PA 17356
(717) 244-2375

5.3 Site Observations

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- There are no monitoring wells on site.
- The landfill is well vegetated, with no signs of stressed vegetation.
- Mill Creek flows under the landfill through a 3-foot diameter concrete culvert.
- Mill Creek had moderate flow and muddy water. Its color and flow were constant throughout its length along the site.
- No leachate seeps were observed.
- A background HNU reading of 1.4 ppm was recorded.
- No HNU readings above background were recorded.
- No mini-alert readings were recorded.
- There were no exposed wastes observed.